



APPLICATION NO. 09/846,410

TITLE OF INVENTION: Multiple Data Rate Hybrid Walsh Codes for  
CDMA

INVENTOR: Urbain A. von der Embse

## ABSTRACT OF THE DISCLOSURE

The invention provides a method and system for the fast encoding and transmission of simultaneous multiple data rate users for Hybrid Walsh CDMA and generalized Hybrid Walsh CDMA codes over the same frequency band and with the different data rate users separated in the sequency domain of these complex CDMA channelization codes. Sequency separation based on data rate and on quality of service (QoS) is analogous to the corresponding grouping of data rate and QoS users in the frequency domain. There is a 1-to-1 correspondence between sequency for Hybrid Walsh and frequency for DFT (discrete Fourier transform) codes. Fast encoding and decoding algorithms and implementations are presented for the Hybrid Walsh and generalized Hybrid Walsh codes.